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ABSTRACT

Since the early 1950's the principal prescriptive model in the psychological study of decision making has been maximization of Subjective Expected Utility (SEU). This SEU maximization has come to be regarded as a description of how people go about making decisions. However, while observed decision processes sometimes resemble the SEU model, decisions appear to be made in an intuitive manner much more frequently. An alternative decision theory is called Image Theory. In this theory, four images (self, trajectory, projected and action) are parts of an overall scheme the decision maker has about what he/she is doing and why. Self-image refers to one's principles; trajectory image to the agenda of goals; projected image to the time table for achieving goals; and action image to the roster of plans for achieving goals. Decisions are adoption decisions or progress decisions. Decisions are made like the SEU model, or in most cases, on the basis of how well the potential adoptee (a candidate goal or plan) is compatible with the principles of the self-image, the goals that already exist on the trajectory image, and in the case of plans, the plans that already exist on the action image. This compatibility governs most decisions. Several research studies on decision making have demonstrated the importance of compatibility and self-image. It must be recognized that people's on-line self-image, their principles, wield power over their actions. (ABL)

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Presented at the American Psychological Association meetings
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Since the early 1950's the principle prescriptive model in the psychological study of decision making has been Maximization of Subjective Expected Utility, or SEU for short (Edwards, 1954). The central notion in this model is that the decision maker evaluates each decision option by balancing its expected negative consequences against its expected positive consequences and selects the option that has the maximum net balance.

In economics and in some areas of psychology this prescriptive model has come to be regarded as descriptive. That is, not only is SEU maximization regarded as the best way of making decisions, it also is regarded as a description of how people actually go about making decisions, whether or not they are aware of it. The reaction to evidence contrary to this second assumption has consisted of rather trivial modifications of the model to make it better fit the data, thus permiting retention of the balancing and maximizing logic that is its foundation (Kahneman & Tversky, 1979; Machina, 1982).

In other areas of decision science, however, there have been expressed doubts and relevant observations (e.g., Mintzberg, 1975; Peters, 1979) that question the descriptive exhaustiveness of the balancing and maximizing logic. That is, while observed decision processes sometimes resemble the SEU model, much more frequently decisions appear to be made in a more causal and 'intuitive' manner, even important business decisions. Indeed, even when trying to be orderly and thorough, to weigh and balance, to compare options fairly

and select the best one, decision makers often get so confused that they give up and go with their gut-feelings. Even when they successfully carry through a SEU analysis, decision makers almost always check the prescribed decision against their omnipresent gut-feeling; when there is conflict, the gut-feeling holds the veto power.

In view of all of this, we have attempted to take a different road in the study of decision making (Beach & Mitchell, 1986; Mitchell, Rediker & Beach, 1986). In doing so we find ourselves in what for us is rather unfamiliar company. We find ourselves with cognitive schema theorists, in general, and with self theorists in particular.

The schema concept is an umbrella concept for many kinds of cognitive structures (Hastie, 1981; Landman & Manis, 1983) For example, there are scripts (Abelson, 1976), Stereotypes (McCauley, Stitt & Segal, 1980), prototypes (Hofstadter, 1979), and, from an earlier day, images (Miller, Galanter & Pribram, 1960). Images are representations of a decision maker's views about how events and states are now, how they ought to be in the future, how they are likely to actually turn out to be when that time comes, and how one plans to insure that they turn out to be something like they ought to be. Because getting things to be the way one wants them to be pretty much describes the bulk of human activity, how it happens is of interest to psychologists in general. And, because achieving these ends requires various decisions, how it happens is of interest to decision researchers in particular. We call our decision theory Image Theory.

Image Theory in Brief

The Images. There are four images, which we regard as parts of an overall schema the decision maker has about what he/she is doing, and why. The primier image is the self image, which in this context means the decision maker's view of what is appropriate, proper, imperative, moral, ethical, right, etc. It is, in short, one's principles.

The second image is the trajectory image, which is the agenda of goals the decision maker seeks to attain. The term 'trajectory' is intended to convey the temporal characteristic of this image, because the goals on the agenda have different times by which they are to be achieved. One part of decision making involves adopting (and deleting) goals for the trajectory image.

The third image is the projected image, which is the anticipated timetable for achieving the goals if the decision maker implements the plans that he/she has adopted for achieving them. The projected image has a temporal aspect that is roughly complementary to that of the trajectory image. It is through comparison of these images, the desired agenda of goal achievement and the anticipated achievement timetable, that permits the decision maker to decide whether progress is being made. If progress is adequate, the decision maker continues with the plans he/she is implementing. If progress is inadequate, the faulty plan must be replaced. The second part of decision making involves deciding whether progress is or is not sufficient.

The fourth image is the action image, which is the roster of plans one has adopted for achieving the goals on one's trajectory image. Each plan has a temporal aspect in that it unfolds in time and culminates with goal achievement. The action image as a whole also has a temporal aspect in that different plans must be unfolding simultaneously and some start and end at different times. Decisions

about adopting plans for the action image are made in the same way as are decisions about adopting goals for the trajectory image.

Decision types. As stated above, there are two types of decisions, adoption decisions and progress decisions. The former, under the censorship of the self image's principles, add goals to the trajectory image, and, under the censorship of both the self image and the trajectory image, add plans to the action image. Progress decisions either keep plans in place and continue with the status quo, or reject plans as inadequate and cause a new plans to be adopted to replace them. If an adequate new plan cannot be found, a rejected plan's goal is itself rejected, perhaps to be replaced with a more easily attained goal.

Decision mechanisms. Decisions are made in either of two ways. In relatively rare instances they are made using a process that is roughly like the balancing and maximizing logic of the SEU model. In most cases, however, both adoption and progress decisions are made on the basis of how well the potential adoptee (a candidate goal or plan) fits with, or is compatible with, the principles on the self image, the goals that already exist on the trajectory image, and in the case of plans, the plans that already exist on the action image. That is, adoption depends upon how well the potential new goal or potential new plan fits in with the decision maker's principles, the other goals that he/she is seeking to attain, and the other plans that he/she is seeking to implement.

It is compatibility, this fittingness, this feeling of rightness about a an option that governs most decisions. The process is a swift, gestalt matching process rather than the cumbersome, analytic process that is implied by the balancing and maximizing logic. Indeed, in most decisions the decision maker seeks to do "the right

thing" even if it does not appear to be the most profitable thing. Moreover, compatibility is a conservative criterion; it keeps the decision maker from adopting extreme or outlandish goals and plans. Even when an option is very attractive, if it would upset the broad general scheme of life, it is unlikely to be adopted.

Some Research on Compatibility

Our interest in compatibility-based decision making grew from many sources, one of which was a project in which one of us was involved some years ago (Beach, Campbell & Townes, 1979). This was a study of what influences couples' decisions about whether to have a (another) child. The research assumed that SEU describes the decision process and that the only puzzle was which positive and negative consequences have the most influence on the decision. The SEU prediction was that couples for whom the balance of pros and cons was positive would decide to have a child and those for whom the balance was negative would decide not to.

The prediction was wrong. Although some subjects' decisions conformed to the SEU prediction, other subjects' decisions did not. First of all, prediction failed for couples who already had attained their ideal family size (their family size goal); even if the balance argued mightily for the child, the couple did not decide to have one. Second, prediction failed for couples who had not reached their family size goal but for whom the balance of pros against cons was only slightly in favor of having the child.

Both of these findings are incongruent with the SEU model. In the first case, if they did not want to have another child, the couples who had reached their family size goal <u>ought</u> to have had negative balances. But the balances were positive--the couples loved children and honestly would have liked to have had another, but a

prior decision overrode this one.

In the second case, even if they wanted a child only slightly more than they did not want it, a couple who had not yet attained their family size goal ought to have decided to have the child--it would have furthered them toward attaining that goal. Instead, it looked as though they not only did not maximize, they actually minimized; they apparently violated the balancing and maximizing logic by selecting the least attractive option. In fact, however, closer examination showed that these couples were not deciding not to have a child, they simply were electing to stick with the status quo (contraception) for the present because the option of having a child simply was not attractive enough at that time to motivate them to do so. They felt that they should be more than merely lukewarm about having a baby before doing so. And, the reasons that they were lukewarm often were that having the child at that time was incompatible with, did not fit with, the other goals on their trajectory images, primarily educational and career goals.

Subsequent to obtaining these findings and beginning to think about compatibility as a decision mechanism, we conducted some small scale studies to see if what we were thinking about was at all reasonable. We have been particularly interested in the question of the compatibility between goals and principles and between plans and principles. This is because we regard the self image and its component principles as the primary referent in decision making. Thus, for example, we did a study of 22 graduating psychology majors' decisions about whether to go to graduate school (goal adoption). We found that 72% of the decisions were made on the basis of whether graduate school would best fit with the students' principles and with the other goals they were trying to achieve. Similarly, 66% of 42

introductory psychology students who were given a hypothetical decision about a job identified compatibility with principles and other goals as the appropriate basis for making the decision and explicitly spurned balancing and maximizing as a method of doing it.

We currently are completing a larger study that examines compatibility between the self image and plan adoption. In this work we have utilized the concept of a 'working' or 'on-line' self concept (Markus & Nurius, in press; Markus & Wurf, in press), in this case, the on-line self image. This term means that because people have many selves, one can speak of the concept or image of the self that is relevant to and operative in a particular situation as the on-line self image. One such situation is when the decision maker is working at his/her job.

In large part, the decision maker's job self image is shared by others in the organization in which he/she works. This is because each employee buys into the 'culture' of the organization (Mitchell, Rediker & Beach, 1986; Peters & Waterman, 1982). That is, to function effectively in an organization, employees must adopt the major points of the organization's guiding principles. When this is done, these principles become part of each employee's on-line self image for his/her job.

The result is that different employees who may have very different on-line self images for other situations, may have fairly similar self images for their jobs. The advantage from a research viewpoint is that this provides a natural laboratory for examining the role of the self image in the adoption of action plans. Capitalizing on this, we have examined the shared on-line self images of executives in two large, nationally known commercial firms. One purpose of the research was to ascertain the degree to which such sharing exists in a

stable, highly structured firm as opposed to a firm that is in flux both in terms of its internal structure and in terms of its market's 'turbulence.' The second purpose was to see if we could predict the respective executives' judgments of the compatibility with their firm's principles of different plans for reaching a given goal.

Briefly, we interviewed 5 executives from each firm, compiled a list of the principles that were cited for each firm (on-line self image), constructed 10 alternative plans by which a firm could introduce a new product (goal), scored each plan in terms of the number of principles it violated for each firm, and then had 10 executives from each firm individually rate each plan for its compatibility with how their firm would be likely to go about introducing a new product.

Results showed that the stable, structured firm's executives had a highly shared on-line self images. That is, the intercorrelations among their ratings of the plans were high. Moreover, their ratings were strongly (negatively) correlated with the plans' violations of the firm's principles. In contrast, for the firm that was in flux, the working self images were not shared and their ratings of compatibility were only weakly related to violations of the firm's principles.

The major methodological implication of these results is that stable structured organizations provide a natural laboratory in which different decision makers' on-line self images share principles that derive from the organizations' cultures. Moreover, these shared on-line self images can be used to study how principles influence (perhaps even determine) job related decisions, particularly decisions based upon compatibility.

Of course, we are continuing our research and we are seeking

better, more inventive and more convincing ways of examining compatibility as a decision mechanism. For example, we have found that subjects' prefered decisions in a decision-dilemma task can be predicted on the basis of compatibility with their principles. Similarly, we have pitted the compatibility of potential jobs (goals) with subjects' principles against the SEU-based attractiveness of the jobs to the same subjects. We find that compatibility rather than SEU predicts the decisions about which jobs to apply for (which goals to seek). All in all, compatibility is a powerful concept. True, we have to define it more clearly and measure it more precisely, but we are working on that and it will come with time.

Finally, our research thusfar convinces us of the fundamental importance of the self image in decision making and decision implementation. Decision theory, and psychological theory in general, seems shy about the behavioral role of principles, of morals, of ethics, and the like. It seems to us that it is about time to overcome this shyness. In spite of rather dramatic lapses, in the main it must be recognized that people's on-line self images, their principles, wield parampunt power over what they will and will not do.

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